births were in NHS hospitals. Social patterns and the provision of obstetric services may explain why the maternal mortality rate (excluding abor- tions) ranges from 5·9 in the Oxford region to 17·2 in the Leeds region with many gradations between these two. The Metropolitan figures vary from 12·7 to 16·0 per 100 000 total births. Oxford shows what is attainable. The reasons for these regional differences should be analysed more carefully, and the findings made the basis of action.

Most deaths were due to the old ogress—abortion (81), pulmonary embolism (61), toxemia (47), ectopic pregnancy (34), sepsis excluding abortion (32), haemorrhage (27), amniotic fluid embolism (22), and ruptured uterus (12), and there was a miscellaneous group of 178. Though there has been some improvement in nearly all areas, there are the same familiar human failures. It was thought that there were avoidable factors in 347 of the deaths: roughly 31% attributed to patients, 42%, to hospital staff, 17%, to general practitioners, 8%, to anaesthetists, 2%, to midwives, and 0·3%, to administration. Something can still be done to increase medical awareness of danger, and there is still a need for education of patients. Recurring indictments are of consultants unwisely delegating obstetric and anaesthetic care to those not yet competent to discharge the responsibility and of general practitioners not recognising warning signs. Control of haemorrhage has vastly improved but there are still failures to recognise the potential dangers of placenta praevia. Pulmonary embolism has been declining as a cause of death, but the reason is not elucidated. Phaeochromocytoma claimed four lives. Anaesthetic deaths were fewer than previously, but of the 35 cases there was probably an avoidable factor in 31. The dangers of ectopic pregnancy do not seem to be fully grasped—there was an avoidable factor in 11 of 34 deaths.

All who have a care for pregnant women have a duty to read this new report—and to mark and inwardly digest it. The return for the effort may well be that some childbearing woman’s life may be saved in the future because dangers were understood and acted upon.


Obituary for fascia lata heart valves

When Senning1 first described valves fabricated from fascia lata for replacing the aortic valve it seemed as if a great advance had been made. Here was the ideal valve substitute: it had a central flow orifice, was non-obstructive, free from the problems of thromboembolism, and was made from strong durable autologous living tissue which was readily available in assorted sizes. Senning’s next report,2 dealing with his first 90 operations, was encouraging—though eight patients had developed moderate or severe aortic regurgitation and most had an early diastolic murmur. There was also a disquieting incidence of late endocarditis.

The technique was adopted enthusiastically in centres on both sides of the Atlantic, but little attention was paid to the reports3-5 of experimental work on fascial valve replacement which began to appear about this time. These emphasized a high incidence of valve failure. Pathological studies showed the development of fibrosis, thickening, degeneration, and calcification of the material, with fusion of commissures and retraction of cusps leading to valve incompetence even as early as two months after insertion.

In 1969 a method of fixation of the fascia lata valve to a rigid frame was described,6-7 so that it became possible to replace any cardiac valve with a fascial valve. Optimistic short-term accounts of both aortic and mitral valve replacement appeared,8,9 but by 1971 doubts had arisen about the durability of the material—at any rate in the mitral position. In 1972 McNenay, Ross, and Yates10 reported short-term results in 72 frame-supported autologous fascia lata valves. Valve failure occurred in 60%, of the survivors of the operation, and 23%, of the original patients had died within two years, most of them from mitral regurgitation. Having found reasonably good function in fascial aortic valves and failure in the tricuspid and mitral positions, this group suggested that it was haemodynamic factors giving rise to irregular stress on the cusps in the ativoventricular site that led to thickening and shrinkage.

By 1973 Senning had inserted 200 fascial aortic valves. A follow-up of 84 survivors for between five and ten years11 showed that one in six had developed endocarditis on the fascial valve, most commonly between two and eight years after operation. Aortic incompetence progressively increased from 15%, at three and a half years to 42%, at five years. Only three patients had no regurgitation, and only one-third had good function. One-quarter of the patients had died, from either endocarditis or valvular insufficiency. Fibrosis, calcification, and the formation of cartilage were seen in the fascia.

Recent reports on the long-term results of fascial valve replacement both in the mitral12 and aortic13 positions have confirmed these findings. The fascial mitral valve shows progressive deterioration with regurgitation over 12-18 months, and at three years only 5-10%, remain competent. Late endocarditis and progressive regurgitation after five years characterise the aortic fascial valves, one-third of which require reoperation. After eight years some valves become stenotic and calcified.14

In 1970 an international meeting on fascia lata heart valves was held in Toronto,15 which decided to set up a cooperative international study and a central registry. The pathologists in this project have now examined 58 excited fascia lata valves which had been in situ for up to 50 months.16 The early pseuddontima had become fibrotic, leading to shrinkage; the cells of the original fascia had disappeared, and the material had ultimately died, with vacuolation and late calcification; cusps had become thickened from organisation of the surface thrombus, and the subsequent shrinkage had led to incompetence of the valves irrespective of the site of implantation. Olsen17 found similar changes in 16 frame-mounted valves. His viability studies showed greatly reduced activity: there was degeneration of the collagen, a decrease in the number of fibroblasts, and superimposition of fibrin on the fibrous tissue. The shrinkage was due to contraction of this fibrous tissue, which sandwiched the fascial cusps, and the changes progressed with time.

Despite the adverse evidence the idea of the dead fascial valve periodically comes back into favour. Trimble,18 reviewing the results of 36 fascial aortic valve replacements at three and a half years, decided that there were sufficiently satisfactory patients returning to their usual and long-term life agreeing that autologous fascia lata is unsuitable, has recently made a case for the use of preserved heterologous fascia (on the basis of a small series) and for heterologous pericardium (for which his follow-up is between one and three years.)

When writing the obituary of the fascia lata valve one must have an epitaph for its tombstone. It is to be found in a paper
Getting postgraduate education right

A doctor must learn throughout his working life, not simply to keep abreast of the growth of medical knowledge but also to cope with the gradual changes in the patterns of practice and in the expectations of patients. Some haphazard continuing education is inevitable from the information with which doctors are bombarded from all sides. They also have access to many sources of reference, but even so their clinical performance is often limited by lack of knowledge and skills. Within the last decade there has been wider recognition of the deficiencies in the current system, and doctors have begun to set up formal programmes to promote their own continuing education.1 Hospital doctors have the best opportunities—frequent contact with colleagues and ward rounds, clinical meetings, and meetings of specialist societies help to keep them up to date. Nevertheless, similar facilities are now being provided for general practitioners; they have been encouraged to attend courses and to use the postgraduate centres which have now been established all over the country.

Presumably these programmes arranged for general practitioners are meant to improve the quality of their day-to-day work, but there must be serious doubts whether this goal has been achieved by the formal presentations organised at most postgraduate centres 2—though they certainly do play a valuable part in providing library facilities and opportunities for contact between colleagues. Formal programmes may fail for several reasons. Firstly, the intended learner—the general practitioner—is often absent when the content of the programme is decided. Secondly, the subject matter which can be covered, even over a year or two, is necessarily limited and may make little difference to the doctor’s daily practice.

Thirdly, and perhaps most important, the programmes usually take the form of lectures or panel discussions during which experts transmit information to a passive audience; this violates the sound educational principle that learners should be active participants in the educational process.

Cole and Engel have recently advocated a different approach, illustrated by their attempts to improve the standard of care given by general practitioners to children with heart disease. They set out in detail the knowledge and skills which the individual doctor should have, or would have to acquire, in order to meet the standards they thought necessary. Their booklet is a commendable attempt to outline the requirements for a course for general practitioners, and those interested in the technical aspects of medical education should study it.

Unfortunately the scheme is detailed and demanding, and it is unlikely that their objectives could be met even for this small area of general practice. Probably any attempt to extend their approach to broader aspects of general practice would be doomed to failure, since their format might discourage or even alienate general practitioners. But they did emphasise one very important principle: that each practitioner should examine their list of objectives and identify his own educational needs. This is surely right. The educational requirements of individual doctors must vary widely; for this reason, if for no other, the continuing education of the doctor must be continuing self-education and not continual instruction. The problem is to help him identify his needs and then to help him satisfy them.

If continuing education aims at helping the doctor to look after his patients, then improvement in the quality of the care he provides must depend not only on detecting gaps in his knowledge but also on identifying deficiencies in the care given to them. To identify these deficiencies the doctor needs feedback on his own performance and that of his medical team. Such feedback could come from his personal evaluation using predetermined standards, from peer review, or from the comments of his practice staff and his patients. As yet, unfortunately, the idea of such evaluation remains foreign to most British doctors, for whom audit is either a mystery or a dirty word. It would be reasonable to resist audit if it were to be used punitively, but surely there can be few sound arguments against its educational use.

At present there is little likelihood that many doctors will review their own performance carefully and critically to determine their educational needs. Such action requires a change in attitude, which will not occur spontaneously and will not result from exhortations, whether from ‘super-docs’ or from the DHSS. Attitudes of this kind need to be vigorously promoted and their seeds must be sown as early as possible. It is in our medical schools that the process must begin.3 Students must learn to recognise the limitations of their own knowledge and abilities, and to admit their areas of ignorance. The attitudes which they develop to independent learning must ensure continuing self-education so that they can adapt to the constant changes in medical practice. At present we do not promote these qualities in our students: this is the greatest indictment of our present system of medical education.

4 Beaton, G R, British Journal of Medical Education, 1974, 8, 145.